

**Appl. No.** : **10/763,897**  
**Filed** : **January 23, 2004**

### **REMARKS**

Claims 10 and 11 have been amended to clarify the subject matter recited therein, and claims 18-21 have been added. Support can be found in the second and third paragraphs on page 12, for example.

Claims 1-3, 7, 16-17 have been canceled without prejudice to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution.

Claims 10-11 and 18-21 are pending in this application. The amendments have added no new matter to the disclosure. Applicant respectfully requests entry of the amendments and reconsideration of the application in view of the following remarks.

#### **Rejection of Claims 1 and 3 Under 35 U.S.C. § 103**

Claims 1 and 3 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tanikawa (USP 5,651,574) and in view of Kiefersauer (USP 6,355,217). Claims 1 and 3 have been canceled without prejudice. This rejection is moot.

#### **Rejection of Claims 2 and 7 Under 35 U.S.C. § 103**

Claims 2 and 7 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tanikawa and Kiefersauer, and further in view of Nakamura (US 2004/0169693). Claims 2 and 7 have been canceled without prejudice. This rejection is moot.

#### **Rejection of Claims 10-11 Under 35 U.S.C. § 103**

Claims 10-11 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tanikawa and Kiefersauer, and further in view of Nakamura.

Claim 10 as amended herein recites:

A method for trapping a micro-crystal, comprising:  
placing a droplet containing micro-crystals on a base;  
inserting a gripping member into the droplet;  
gripping one of the micro-crystals in the droplet by the gripping member;

inserting a loop into the droplet and positioning the loop to capture the micro-crystal being gripped on an upper side or lower side of the loop, said loop being configured to retain liquid of the droplet therein by closing the loop with the liquid using its surface tension when separated from the droplet; and

separating the loop and the gripping member together from the droplet while maintaining the position of the micro-crystal being gripped by the gripping member in the vicinity of the loop, thereby retaining the crystal inside the loop with liquid of the droplet with surface tension of the liquid.

Conventionally, inserting a loop into a droplet moves a micro-crystal in the droplet, and thus the micro-droplet tends to move away from a viewfinder of a microscope and also cannot easily be captured by the loop. In contrast, in the claimed method, the gripping member can be inserted into the droplet without disturbing the droplet, and thus a micro-crystal does not move away from the gripping member and can be securely and easily captured by the gripping member.

Further, conventionally, it is impossible to capture a micro-crystal staying or settled at a bottom of the droplet by the loop because the loop cannot scoop the micro-crystal from underneath the micro-crystal. In contrast, in the claimed method, by using the gripping member, a micro-crystal at the bottom of the droplet can be captured.

Furthermore, conventionally, even though the loop captures a micro-crystal, when separating the loop from the droplet, the loop often loses the micro-crystal captured therein. At the moment the loop is separated from the droplet, the liquid inside the loop is separated from the remaining liquid of the droplet by breaking the surface tension of the liquid. Because the surface tension is strong, it is difficult to keep the micro-crystal inside the loop when being separated from the droplet. This is also true when a gripping member alone is used. The gripping alone is not sufficient to overcome the surface tension and keep a micro-crystal gripped when being separated from the droplet. In contrast, in the claimed method, by separating the loop and the gripping member together from the droplet, the surface tension can effectively be overcome so as to securely maintain the micro-crystal inside the loop.

Additionally, in the claimed invention, after capturing a micro-crystal by the gripping member at the bottom of the droplet, the loop can be placed above the micro-crystal (need not scoop it from underneath), and both the loop and the gripping member can be separated together from the droplet. This can provide a significant advantage that the step of inserting the loop can be

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performed while observing the loop above the micro-crystal gripped by the gripping member. This advantage is specifically related to claims 18 and 19.

A person of ordinary skill in the art would not learn the above features upon full review of the prior art references of record. Kiefersauser teaches a loop, and Tanikawa teaches a gripping member. However, even if the teachings of Kiefersauser and the teachings of Tanikawa are combined, the claimed specific steps and sequence are not taught or suggested. Further, none of the references mentions the problem caused by separating the micro-crystal from the droplet due to the high surface tension.

Further, Nakamura teaches an imaging apparatus. However, Nakamura teaches detecting droplets but does not teach anything about observing the inside of the droplet, and thus Nakamura is irrelevant to the step of observing the loop and the gripping member recited in claim 11. A person of ordinary skill in the art could not learn the above step from Nakamura.

At least in view of the above, claims 10 and 11 cannot be obvious over Tanikawa, Kiefersauser, and Nakamura.

#### Rejection of Claims 16 and 17 Under 35 U.S.C. § 103

Claims 16 and 17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tanikawa and Kiefersauser, further in view of Nakamura. Claims 16-17 have been canceled without prejudice. This rejection is moot.

#### New claims


Claims 18-21 have been added. These claims depend ultimately from claim 10 and further recite additional features which are not taught or suggested by the prior art of record.

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**CONCLUSION**

In light of the Applicant's amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Respectfully submitted,

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